

REMARKS

Claims 3-16, and 28 were pending, all of which were rejected. Claims 3, 5-6, 8, 13-14, and 28 are amended, Claims 7, 11-12 cancelled and Claims 30-33 have been added. No new matter is added.

Claim Objections

Claims 3, 7, 11-13, and 28 were objected to as containing informalities. Claims 7, 11 and 12 have been cancelled. Applicant submits that there is no technical difference between zero order and zeroth order, and that either would be well understood by those skilled in the art. Nevertheless, to expedite prosecution, the Examiner's suggested changes have been made to Claims 3, 13, and 28. Reconsideration and withdrawal of the objection is respectfully requested.

Claim Rejections – 35 U.S.C. §103

Claims 3, 5, 9, 10, 13, and 15 were rejected under 35 U.S.C. §103(a) as being unpatentable over Rosencwaig et al. (US 5,596,406) ("Rosencwaig") in view of Finarov et al. (6,657,736) ("Finarov") and Scheiner et al. (6,100,985) ("Scheiner"). Reconsideration is requested.

Independent Claim 3 has been amended to recite "An apparatus for measuring one or more parameters of a diffracting structure and at least one underlying layer on a sample", including "a computer system for analyzing said spectrograph signal to determine said one or more parameters of said diffracting structure and at least one underlying layer on said sample program" and "obtaining an optical model simulating said diffracting structure and at least one underlying layer using at least one variable parameter", and "curve fitting said spectral information for said optical model to said extracted spectral information to determine said one or more parameters of said diffracting structure and at least one underlying layer on said sample". Support for the amendment may be found, e.g., at page 13, lines 7-10; page 13, lines 16-32, page 14, line 5-page 15, line 9; page 17, lines 3-11.

Thus, the underlying layer is fit at the same time as the diffracting structure, which advantageously eliminates the need to premeasure the underlying parameter. Finarov, by way of example, teaches that the a premeasurement is made at an unpatterned site to determine

parameters “of one or more layers including the patterned layer 2.” Col. 16, lines 16-25.¹ Finarov teaches that the results of the premeasurement “are used to limit the scope of the search” of the library to determine the profile of the grating. Col. 17, lines 10-21.

Thus, Finarov does not teach or suggest “analyzing said spectrograph signal to determine said one or more parameters of said diffracting structure and at least one underlying layer”. Neither Rosencwaig nor Scheiner make up for the deficiency of Finarov. Accordingly, Applicant respectfully submits that Claim 1 is allowable. Reconsideration and withdrawal of this rejection is respectfully requested. Claims 5, 9, and 10 depend from Claim 1 and are, therefore, likewise patentable for at least the same reasons.

Independent Claim 13 recites “using said detected intensities of said spectral components of said output beam for a plurality of orientations to determine said at least one parameter of said diffracting structure and at least one underlying layer”. As discussed above, Finarov, Rosencwaig and Scheiner fails to teach or suggest this. Accordingly, Applicant respectfully submits that Claim 13 is allowable. Reconsideration and withdrawal of this rejection is respectfully requested. Claims 15 depends from Claim 13 and is, therefore, likewise patentable for at least the same reasons.

Claim 4 was rejected under 35 U.S.C. §103(a) as being unpatentable over Rosencwaig in view of Finarov and Scheiner and further in view of Solomon et al. (5,900,633) (“Solomon”). Reconsideration is respectfully requested.

Claim 4 is dependent on Claim 3 and is allowable for at least the same reasons. Solomon does not remedy the defects of the cited art.

Accordingly, Applicants respectfully submit that Claim 4 is allowable and request reconsideration and withdrawal of the above rejection.

Claim 6 was rejected under 35 U.S.C. §103(a) as being unpatentable over Rosencwaig in view of Finarov and Scheiner and further in view of Xu et al. (6,483,580) (“the ‘580”).

Claim 6 depends from Claim 3, and thus is allowable for at least the same reasons as Claim 3. The ‘580 does not remedy the defects of the cited art discussed above. In fact, the

¹ Finarov notes that this premeasurement may also be made at the patterned site when “the spectral characteristic of light returned from the measurement spot is not significantly affected by the line profile.” Col. 16, lines 37-47.

'580 explicitly teaches that a premeasurement is made, as described in Finarov above. See, e.g., col. 5, lines 50-54 and col. 7, lines 7-19.

Accordingly, Applicants respectfully submit that Claim 6 is allowable and request reconsideration and withdrawal of the above rejection.

Claims 7 and 8 were rejected under 35 U.S.C. §103(a) as being unpatentable over Rosencwaig in view of Finarov and Scheiner and further in view of Motulsky ("Analyzing Data with GraphPad Prism") ("Motulsky"). Claim 7 was cancelled and Claims 30-31 have been added that include substantially the same subject matter, and which depend from Claim 3. Claim 8 has been amended to depend from new Claim 30. Claims 30-31 and 8 are dependent on Claim 3 and are allowable for at least the same reasons. Motulsky does not remedy the defects of the cited art.

Accordingly, Applicants respectfully submit that Claim 30-31 and 8 is allowable and request reconsideration and withdrawal of the above rejection.

Claims 11, 12, and 16 were rejected under 35 U.S.C. §103(a) as being unpatentable over Rosencwaig in view of Finarov and Scheiner and Shibata et al. (6,690,469) ("Shibata"). Reconsideration is respectfully requested.

Claims 11 and 12 have been cancelled and new Claims 32 and 33 have been added, which include substantially the same subject matter as Claims 11 and 12, and which depend from Claim 3. Claim 16 depends from Claim 13. Accordingly, Applicant respectfully submits that Claim 32-33 and 16 is allowable for at least the same reasons as Claims 3 and 13, respectively, and request reconsideration and withdrawal of the above rejection.

Claim 14 was rejected under 35 U.S.C. §103(a) as being unpatentable over Rosencwaig in view of Finarov and Scheiner and further in view of Xu et al. (6,483,580) ("the '580").

Claim 14 depends from Claim 13, and thus is allowable for at least the same reasons as Claim 13. The '580 does not remedy the defects of the cited art discussed above in reference to Claim Claim 6. Accordingly, Applicants respectfully submit that Claim 14 is allowable and request reconsideration and withdrawal of the above rejection.

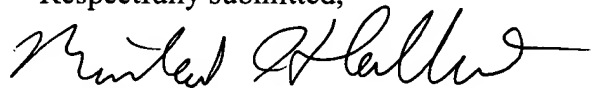
Claim 28 was rejected under 35 U.S.C. §103(a) as being unpatentable over Rosencwaig in view of Finarov and Shibata. Reconsideration is respectfully requested.

Claim 28 has been amended to recite "a processor for comparing the detected intensity of spectral components of the zeroth order radiation to calculated intensity of spectral components for an optical model of the diffracting structure and at least one underlying layer to determine the one or more parameters of the diffracting structure and at least one underlying layer. As discussed above, Rosencwaig, Finarov and Shibata alone or in combination fail to disclose or suggest this. Accordingly, Claim 28 is allowable over the cited references.

Claims 3, 5-6, 8, 13-14, and 28 have been amended, Claims 7, 11-12 have been cancelled and Claims 30-33 have been added, leaving Claims 3-6, 8-10, 13-16, and 28-33 pending. For the above reasons, Applicants respectfully request allowance of all pending claims. Should the Examiner have any questions concerning this response, the Examiner is invited to call the undersigned at (408) 982-8202.

**Via Express Mail Label No.
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Respectfully submitted,



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